TABLE

Table B-1
Request for Analyses for Groundwater Samples*
Omega Superfund Site
Operable Unit 2

ANALYSES REQUESTED		Volatile Organic Compounds	1,4-Dioxane	Chromium VI
METHOD		EPA 8260B	EPA 8270C SIM	EPA 218.6
LABORATORY		Eurofins Calscience, Inc.		
CONTAINER TYPE		40ml VOA Vial	1L Amber	250ml Poly
PRESERVATIVES		4° C, HCl, pH <2	4° C	4° C
ANALYTICAL HOLDING TIMES		14 days	7days/40 days	24 hrs[a]
NO. CONTAINERS PER ANALYSIS		3	1	1
SAMPLE LOCATION	**SAMPLING SCHEDULE**			
Sampling Points				
Wells to be installed as part of the LEI				
LEI Well Cluster Location 1	Quarterly for 3 quarters following well installation[b]	TBD	TBD	TBD
LEI Well Cluster Location 2	Quarterly for 3 quarters following well installation[b]	TBD	TBD	TBD
LEI Well Cluster Location 3	Quarterly for 3 quarters following well installation[b]	TBD	TBD	TBD
QA/QC Samples				
Equipment Blanks[c]	Quarterly for 3 quarters following well installation[b]	1 per day or 1 per every 10	1 per day or 1 per every 10	1 per day or 1 per every 10
Field Blanks[d]	Quarterly for 3 quarters following well installation[b]	--	--	--
Trip Blanks	Quarterly for 3 quarters following well installation[b]	1 per cooler	--	--
Duplicates[e]	Quarterly for 3 quarters following well installation[b]	1 per every 10	1 per every 10	1 per every 10

Notes:
* - This table will be updated following the installation and sampling of the LEI wells.
a - If sample is field filtered and stored in ammonia sulfate buffer preservative, 28-day hold times are permitted.
b - LEI wells will be added to the WAMP upon completion of the three quarterly of initial sampling under the scope of the LEI.
c - One equipment rinsate blank will be collected per matrix each day that sampling equipment is decontaminated in the field or for every 10 samples collected, whichever is more frequent.
d - Field blanks will be collected daily when dedicated equipment is used and equipment (rinsate) blanks are not collected.
e - Duplicate samples will be collected at a rate of 10 percent of the samples collected.
°C - degree Celsius
EPA - United States Environmental Protection Agency
HCl - hydrochloric acid
L - Liter
LEI - Leading Edge Investigation
ml - milliliter
QA/QC - quality assurance/quality control
TBD - To be determined
VOA - volatile organic analysis
WAMP - Work Area Monitoring Plan

FIGURES

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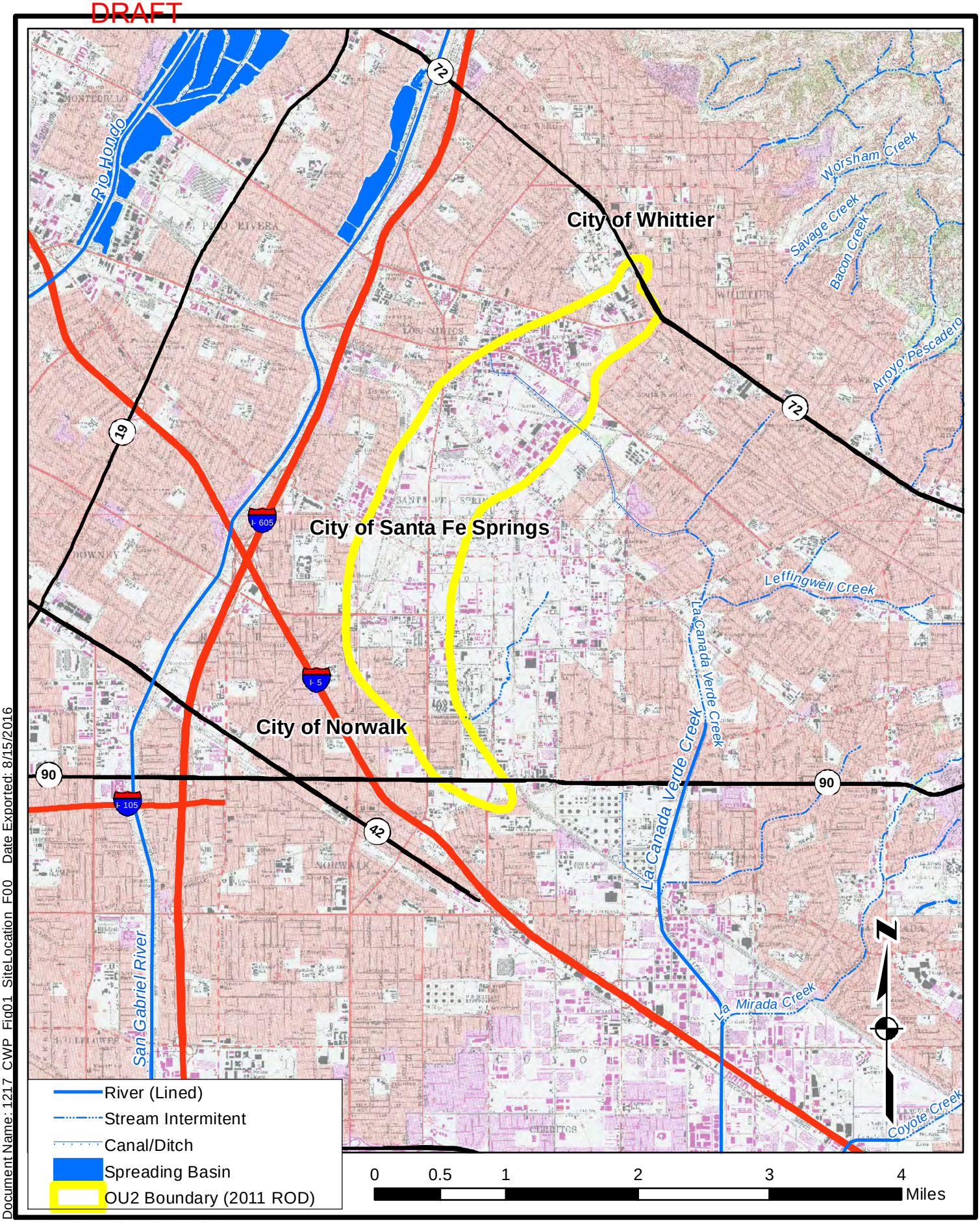

Document Name: 1217_CWP_Fig01_SiteLocation_F00 Date Exported: 8/15/2016

HARGIS + ASSOCIATES, INC
Hydrogeology/Engineering

FIGURE B-1. SITE LOCATION

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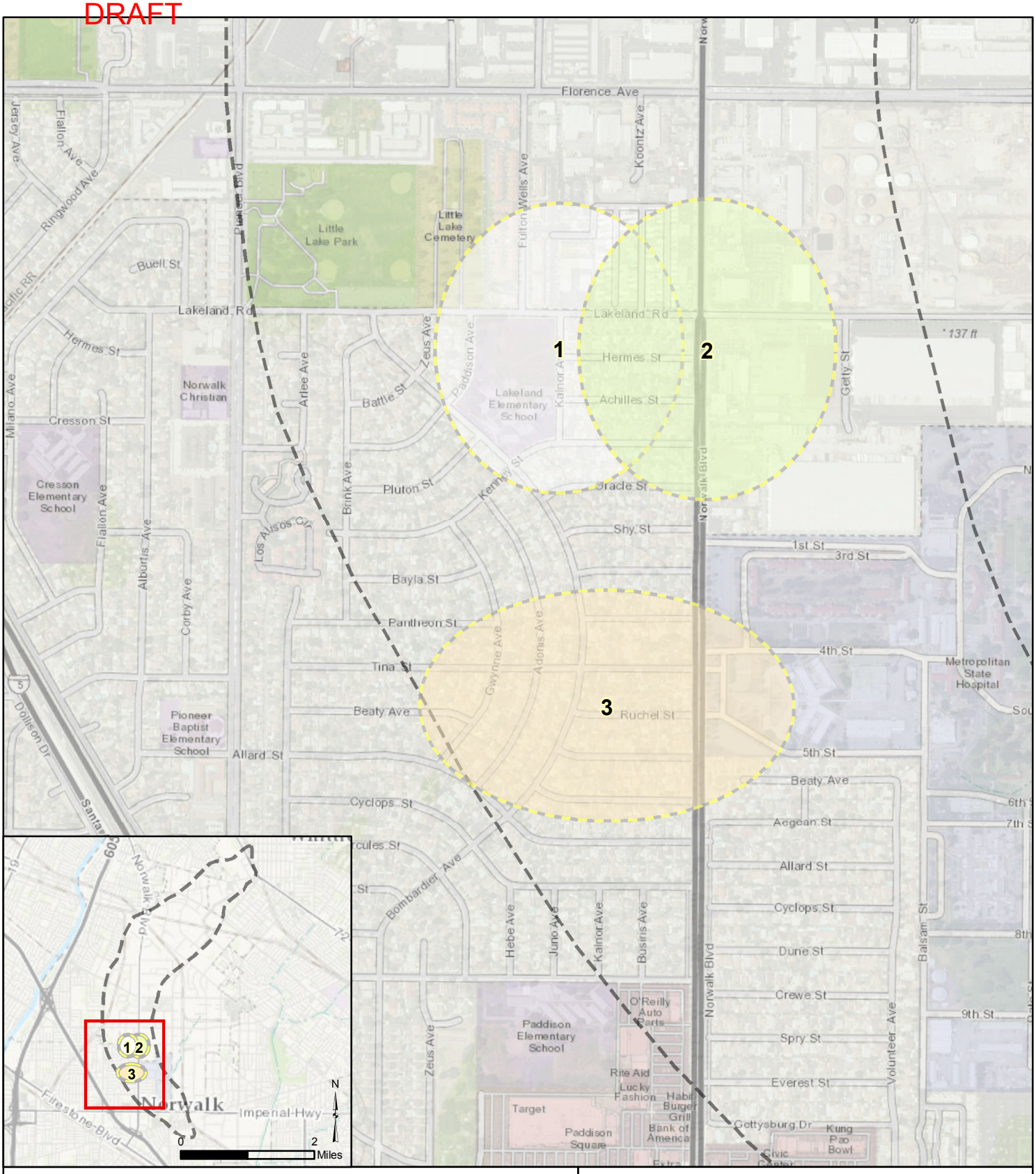

Legend

- Proposed Monitoring Well Cluster
- Operable Unit 2 (OU2) Boundary

N

0 800 Feet

Proposed Well Cluster Locations

Omega Superfund Site - OU2
Los Angeles County, California

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WR2209 | August 2016

Figure B-2

\\oakland-01\data\GIS\Omega\Project\2016\2016_LEIworkplan\Fig-02_ProposedLocations.mxd 7/25/2016 4:54:15 PM

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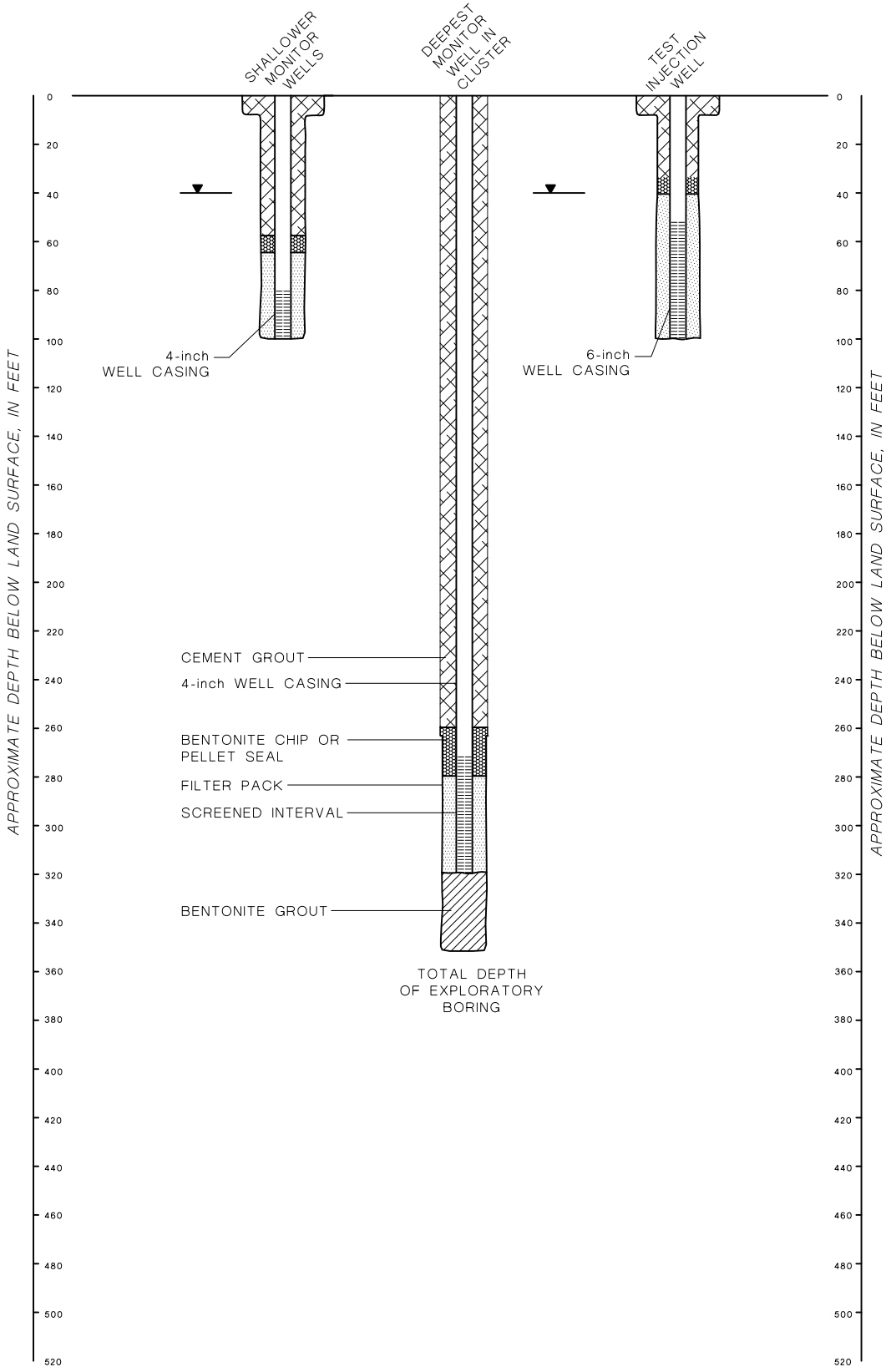

NOTE: ACTUAL DEPTHS TO BE DETERMINED

7/16	RPT NO. 1098.105	710-0896	A

Jul 26, 2016 - 1:43pm ess - T:\2016\1000-1099\1098 Omega\Hydrogeology\Well Diagrams\710-0896.dwg

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FIGURE B-3
SCHEMATIC WELL CONSTRUCTION DIAGRAM

ATTACHMENT B-1

Field Forms

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FORM B-1
LITHOLOGIC LOG FORM

BOREHOLE ID:	LOCATION:		PAGE 1 OF
PROJECT NO.:	PROJECT NAME:	LOGGED BY:	
WEATHER:			DATE(S):
DRILLING METHOD, EQUIPMENT:			HOLE DIA.:
DRILLING CONTRACTOR:		OPERATOR:	
SAMPLING METHOD, EQUIPMENT:			
SURFACE ELEVATION: ft/msl	TOTAL DEPTH: ft/bls	DTW: ft/bmp	
REMARKS:			

SAMPLES	CORE RECOVERY	DEPTH (feet bls)	GRAPHIC LITHOLOGY	USCS GROUP SYMBOL	LITHOLOGIC DESCRIPTION Textural classification (modifier, root), Munsell color descriptor (value), moisture content, consistency or relative density, plasticity, grain size, sorting, roundness, miscellaneous properties.	NOTES, REMARKS, OBSERVATIONS
		0				

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FORM B-1
LITHOLOGIC LOG FORM

BOREHOLE ID:	LOCATION:	PAGE OF
PROJECT NO.:	PROJECT NAME:	LOGGED BY:
WEATHER:		DATE(S):

SAMPLES	CORE RECOVERY	DEPTH (feet bls)	GRAPHIC LITHOLOGY	USCS GROUP SYMBOL	LITHOLOGIC DESCRIPTION Textural classification (modifier, root), Munsell color descriptor (value), moisture content, consistency or relative density, plasticity, grain size, sorting, roundness, miscellaneous properties.	NOTES, REMARKS, OBSERVATIONS

ft/bls = Feet below land surface; ft/bmp = Feet below measuring point;
DIA = Diameter; USCS = Unified Soil Classification System
ft/msl = Feet mean sea level; DTW = Depth to water

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FORM B-2
WELL COMPLETION AND DEVELOPMENT REPORT

Project No. _____

Project Name _____

COMPLETION REPORT FOR WELL _____

Drilling Company: _____

Driller: _____

Drill Rig: _____

Date drilling started: _____

Date drilling completed: _____

Description of drilling _____

_____

_____

A. GENERAL

Location: _____

Location coordinates: x _____ y _____

Total depth of borehole: _____ feet bls

Borehole diameter: _____ inches, from _____ to _____ feet bls

_____ inches, from _____ to _____ feet bls

Lost circulation zones: _____

Lithology logged by: _____

B. CONSTRUCTION

Conductor Casing

Type: _____ , O.D.: _____

Wall thickness: _____ , from _____ to _____ feet bls

Centralizers/Shoe: _____

FORM B-2
WELL COMPLETION AND DEVELOPMENT REPORT

Project No. _____

Project Name _____

COMPLETION REPORT FOR WELL _____

Well Casing

Type: _____ , O.D.: _____

Wall thickness: _____ , from _____ to _____ feet bls

Type: _____ , O.D.: _____

Wall thickness: _____ , from _____ to _____ feet bls

Well Screen

Type: _____ , O.D.: _____

Wall thickness: _____ , from _____ to _____ feet bls

Type: _____ , O.D.: _____

Wall thickness: _____ , from _____ to _____ feet bls

Centralizers/Shoe: _____

C. GROUT AND CEMENTING RECORD

Annular space: _____

Type of cement/grout: _____

Method of emplacement: _____

Approximate number of yards/bag: _____

Comments: _____

_____

_____

Annular space: _____

Type of cement/grout: _____

Method of emplacement: _____

Approximate number of yards/bag: _____

Comments: _____

_____

FORM B-2
WELL COMPLETION AND DEVELOPMENT REPORT

Project No. _____

Project Name _____

COMPLETION REPORT FOR WELL _____

D. **GRAVEL PACK**

Type: _____ , from _____ to _____ feet bls

Volume emplaced: _____ , Method emplaced: _____

Type: _____ , from _____ to _____ feet bls

Volume emplaced: _____ , Method emplaced: _____

Grout Filter

Type: _____ , from _____ to _____ feet bls

Volume emplaced: _____ , Method emplaced: _____

Bentonite Seal

Type: _____ , from _____ to _____ feet bls

Volume emplaced: _____ , Method emplaced: _____

E. DEVELOPMENT RECORD

Date: _____

Procedure: _____

Duration: _____ minutes

Procedure: _____

Duration: _____ minutes

Pumping duration: _____ minutes

Average pump discharge rate: _____ gpm

Drawdown at end of pumping: _____ feet bls

Field parameters (initial): pH _____ , Conductivity _____ (umhos),

Temperature _____ (°C), Turbidity _____

Field parameters (final): pH _____ , Conductivity _____ (umhos),

Temperature _____ (°C), Turbidity _____

FORM B-2
WELL COMPLETION AND DEVELOPMENT REPORT

Project No. _____

Project Name _____

COMPLETION REPORT FOR WELL _____

F. PUMP INSTALLATION DATA

Pump installer: _____

Installation date: _____

Pump purpose/type: _____

Pump model/specs: _____

Pump setting: _____

Pump purpose/type: _____

Pump model/specs: _____

Pump setting: _____

Surface completion (hole vault type, etc.): _____

G. REFERENCE ELEVATIONS

Land surface elevation: _____ feet msl

Measuring point elevation: _____ feet msl

Description of measuring point: _____

Date surveyed: _____ , by: _____

H. COMMENTS AND NOTES RE DRILLING WELL CONSTRUCTION OPERATIONS

_____

_____

_____

_____

_____

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FORM B-2
WELL COMPLETION AND DEVELOPMENT REPORT

Project No. _____

Project Name _____

MONITOR WELL PLACEMENT FORM

Proposed Well ID:_____ Actual Well ID: _____

Date:_____ By: _____

Street Address or APN: _____

City/Town: _____

Nearest Cross Street: _____

Thomas Brothers Reference: _____

Owner/Jurisdiction: _____

County Permit No. : _____

USA Alert Ticket: _____

Comments:_____

_____

_____

Sketch Map

FORM B-2
WELL COMPLETION AND DEVELOPMENT REPORT

Project No. _____

Project Name _____

DEVELOPMENT REPORT FOR WELL _____

A. DEVELOPMENT REPORT

Well Type: _____

Development Company: _____

Developer/Helper: _____

Development Rig: _____

Date of Development: _____

Field Notebook: _____

Personnel: _____

Description of Development: _____

_____

_____

_____

B. WELL DEVELOPMENT

Total Well (Driller): _____ feet bls

Depth to bottom of well before development: _____ feet bls

Bottom: soft, medium, hard

Depth to water before development: _____ feet bls

Procedure: _____

Duration: _____ minutes, Comment: _____

Procedure: _____

Duration: _____ minutes, Comment: _____

Procedure: _____

Duration: _____ minutes, Comment: _____

Procedure: _____

Duration: _____ minutes, Comment: _____

FORM B-2
WELL COMPLETION AND DEVELOPMENT REPORT

Project No. _____

Project Name _____

DEVELOPMENT REPORT FOR WELL _____

Procedure: _____

Duration: _____ minutes, Comment: _____

Pumping duration: _____ minutes

Field parameters (initial): pH _____ , Conductivity _____ (umhos),

Temperature _____ (°C), Turbidity _____

Average pump discharge rate: _____ gpm Gallons purged: _____

Depth to water at end of pumping: _____ feet bls, Drawdown _____ feet

Specify Capacity: _____ gpm/ft

Field parameters (final): pH _____ , Conductivity _____ (umhos),

Temperature _____ (°C), Turbidity _____

Depth to bottom of well after development: _____ feet bls

Bottom: soft, medium, hard

Depth to water after development and recovery: _____ feet bls

Measured: _____ hours after final pumping

C. PUMP INSTALLATION DATA

Pump installer: _____

Installation date: _____

Pump purpose/type: _____

Pump model/specs: _____

Pump setting: _____

Pump purpose/type: _____

Pump model/specs: _____

Pump setting: _____

Comments: _____

_____

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FORM B-2
WELL COMPLETION AND DEVELOPMENT REPORT

Project No. _____

Project Name _____

DEVELOPMENT REPORT FOR WELL _____

D. SURVEY DATA

Surveyor: _____

Date surveyed: _____

Land surface elevation: _____ feet msl

Measuring point elevation: _____ feet msl

Location coordinate: x _____ y _____

Description of measuring point: _____

E. COMMENTS

_____

_____

_____

_____

_____

_____

_____

_____

FOOTNOTES

°C = degrees Celsius
bls = Below land surface
msl = Mean sea level
O.D. = Outer Diameter
umhos = Micromhos
ID = Identifier
APN = Assessor's Parcel Number
gpm = Gallons per minute

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FORM B-3
STATIC WATER LEVEL DATA SHEET

MONTH/YEAR: _____

PROJECT NUMBER: _____

METHOD OF MEASUREMENT/SOUNDER IDENTIFIER: _____

WELL IDENTIFIER	DATE	TIME	MEASURING POINT	DEPTH TO WATER FROM REFERENCE POINT (± feet)	REFERENCE POINT ELEVATION (± feet msl)	WATER LEVEL ELEVATION (± feet msl)	PREVIOUS DEPTH TO WATER (feet)	CHANGE IN WATER LEVEL (± feet)	COMMENTS	INITIALS

Msl = Mean sea level

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FORM B-4
WATER LEVEL INDICATOR
CALIBRATION DOCUMENTATION FORM

PROJECT NUMBER:_____

DATE	TIME	WATER LEVEL INDICATOR TYPE	WATER LEVEL INDICATOR NUMBER	CALIBRATION METHOD	CALIBRATED BY (INITIALS)	REMARKS

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FORM B-5
LOW-FLOW GROUNDWATER SAMPLE FORM

DATE: _____ **TASK:** _____ **WELL ID:** _____

SELECT TUBING SPECS	
TUBING DIAMETER	TUBING CAPACITY
3/8" X 1/2"	22 mL/ft
1/4" X 3/8"	9.7 mL/ft
0.17"ID	4.5 mL/ft

Calculate System Volume

Length of tubing: _____ ft x Capacity of Tubing: _____ mL/ft

Tubing Volume = _____ L

+ Vol of flow-thru cell: _____ L

+ Vol of pump: _____ L

Total Vol of System = _____ L x 2 = **Min. Purge Volume =** _____ L

Initial Measurements

Static Depth to water: _____ ft brp

Well Total Depth: _____ ft brp

Screened Interval : _____ to _____ ft brp

Pump Intake : _____ ft brp

brp description (circle one): TOC LS other

Purge Summary Initials: _____

Begin Purge: _____ End Purge: _____

Tot. Vol Purged: _____ L SVs purged: _____

Weather Conditions Time: _____

Temp. _____ 'F Skies _____

Wind _____ mph From _____

Pump Type (circle one) : **Bladder pump** **or** **Peristaltic Pump**

Time	Flow Controller Settings	Depth to Water (ft brp)	Flow Rate (mL/min)	Volume Purged (L)	System Volumes Purged	….FIELD PARAMETERS…. Temp. (°___) +/- 3%	Ph units +/- 0.1 unit	EC (___S/cm) +/- 3%	O.R.P. (mV) +/- 10 mV	D.O. (mg/L) +/- 0.3mg/L	Turbidity (NTU) +/- 10% (if > 10NTU)	COMMENTS

SAMPLE COLLECTION SAMPLE TIME _____

ANAYSIS	QUANTITY	TYPE
VOCs by EPA 8260B		40 mL VOA w/ HCl
1,4-Dioxane by EPA 8260B MOD		40 mL VOA w/ HCl

DUPLICATES / BLANKS? Y N
If yes, complete appropriate forms.

AIR MONITORING PID/FID ppm: VAULT _____ BKGD___ BREATHING ZONE___ DISCHARGE WATER_____

NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)

Acronyms and Abbreciations: SVs = System Volumes; brp = below reference point; mL = milliliters; gal = gallons; L = liters; DTW = depth to water; TD = total depth

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PROJECT _____

FORM B-6
INSTRUMENT CALIBRATION LOG FOR GROUNDWATER SAMPLING: EC METER

DATE	TIME	EC SOLUTION ( )	TEMPERATURE OF SOLUTION	EC READING ( )	CORRECTION FACTOR	METER TYPE	COMMENTS	INITIALS

EC = Electrical conductivity

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PROJECT _____

FORM B-7
INSTRUMENT CALIBRATION LOG FOR GROUNDWATER SAMPLING: pH METER

DATE	TIME	pH BUFFER (units)	TEMPERATURE OF BUFFER	pH READING (units)	CORRECTION FACTOR	METER TYPE	COMMENTS	INITIALS

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PROJECT _____

FORM B-8
INSTRUMENT CALIBRATION LOG FOR GROUNDWATER SAMPLING: DISSOLVED OXYGEN METER CALIBRATION (AIR METHOD)

DATE	TIME	METER MODEL	TEMP (ºC)	ELEVATION (ft msl)	SOLUBILITY OF OXYGEN	ALTITUDE CORRECTION FACTOR	CALIBRATION VALUE[(a)] (mg/l)	COMMENTS	INITIALS

(a) Calibration value determined by multiplying solubility value by altitude correction factor

°C = Degrees Celsius
ft msl = Feet mean sea level
mg/l = Milligrams per liter

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FORM B-9
BLANK SAMPLE LOG FORM

PROJECT NUMBER:_____

MONTH/YEAR:_____

PAGE _____OF_____

DATE	TYPE BLANK (Trip or Rinsate)	SAMPLE IDENTIFIER	TIME	PREPARATION LOCATION	ANALYTICAL METHOD	BLANK WATER SOURCE & DATE	BATCH NUMBER	COMMENTS AND SAMPLING CONDITIONS	INITIALS

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FORM B-10
DUPLICATE/SPLIT SAMPLE LOG FORM

SAMPLE DATE	SAMPLE TIME ACTUAL/REPORTED	SAMPLE LOCATION	SAMPLE IDENTIFIER	ANLAYTICAL METHOD	COMMENTS	INITIALS

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FORM B-11

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CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST FORM

DATE _____ PAGE ____ OF ____

PROJECT NAME	PROJECT No./TASK No.
PROJECT MANAGER	Phone No.
QA MANAGER	Fax No.
SAMPLER (SIGNATURE)	SAMPLER (PRINTED)

LAB ID	SAMPLE ID	SAMPLE COLLECTION		MATRIX				PRESERVATION						SAMPLE CONTAINERS	ANALYSIS REQUESTED	ESTIMATED CONCENTRATION RANGE (ppb) FOR VOA'S	SPECIAL HANDLING	LABORATORY INFORMATION
		Date	Time	Soil	Ground water	Surface water		HCl	HNO_3	NaOH	H_2SO_4	Ice						REMARKS
Total number of Containers per analysis:																	Total No. of Containers: _____	

Relinquished by:	Date	Received by:	Date
	Time		Time
Company		Company	
Relinquished by:	Date	Received by:	Date
	Time		Time
Company		Company	

INSTRUCTIONS

1. Fill out form completely except for shaded areas (lab use only); sign only after verified for completeness.
2. Complete in ballpoint pen. Draw one line through errors, initial and date correction.
3. Indicate number of sample containers in analysis request space; indicate choice with ✓ or x.
4. Note applicable preservatives, special instructions, and deviations from typical environmental samples.
5. Consult project QA documents for specific instructions.

Sample Receipt:

- ☐ No. of containers correct
- ☐ custody seals secure

Temp. @ receipt _____ °C

- ☐ received good condition/cold
- ☐ conforms to COC document

Shipment Method: _____

Send Results to: _____

☐ 9171 TOWNE CENTRE DRIVE, SUITE 375
SAN DIEGO, CA 92122 (858) 455-6500

☐ 1640 SOUTH STAPLEY DRIVE, SUITE 209
MESA, AZ 85204 (480) 345-0888

☐ 7400 NORTH ORACLE ROAD, SUITE 202
TUCSON, AZ 85704 (520) 881-7300

Send invoice to San Diego, CA
Attn: Accounts Payable

ORIGINAL: LABORATORY YELLOW: QA MANAGER PINK: FIELD/TASK MANAGER